

Application No. 09/972,268
Declaration under 37 CFR 1.131

3101-A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No: 09/972,268
Applicants: Peter R. Baum, William C. Fanslow III, Timothy E. Lofton,
Eric A. Sorensen, and Adel Youakim
Filed: October 5, 2001
Title: NECTIN POLYPEPTIDES

TC/Art Unit: 1644
Examiner: Maher M. Haddad

Docket No.: 3101-A

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.131

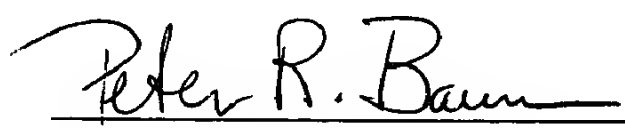
We, Peter R. Baum, William C. Fanslow III, Timothy E. Lofton, Eric A. Sorensen, and Adel Youakim, the undersigned, hereby declare that:

1. This Declaration is made by the inventors of the above-captioned patent application in order to establish a date of invention in the United States prior to April 1, 2000.
2. Prior to April 1, 2000, a DNA clone that encodes human nectin-3 polypeptide (also called "B7L4" polypeptide) had been isolated and its sequence determined in the United States by inventors named in the subject application, as evidenced by the Exhibits A and B enclosed herewith. The works described in Exhibits A and B were completed in this country prior to April 1, 2000.
3. Exhibit A is a copy of a page from one of the laboratory notebooks of Eric A. Sorensen, written in his handwriting, describing a restriction enzyme digest of an isolated lambda phage clone called "HuB7L4 11-1". All dates on the copy have been redacted.

4. Exhibit B (eight pages) is a copy of a computer printout that is incorporated into one of the laboratory notebooks of Eric A. Sorensen, showing the results of the sequencing of the HuB7L4 11-1 clone insert that was performed at the direction of Eric A. Sorensen. The amino acid sequence shown below the corresponding nucleotide sequences is that of human nectin-3 as presented in SEQ ID NO:2 of the above-captioned application (and is identical to amino acids 8 through 549 of SEQ ID NOs 4 and 6). The first page of Exhibit B indicates the location of a predicted signal sequence cleavage site, and the fourth page of Exhibit B indicates the location of the start of the transmembrane domain. All dates on the copy have been redacted.

5. Therefore, on a date prior to April 1, 2000, the inventors of the above-captioned application had determined the amino acid sequence of a human nectin-3 polypeptide including the extracellular domain of a mature form of human nectin-3.

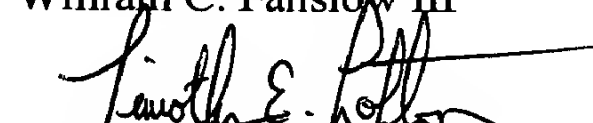
6. As a person signing below: I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.


Peter R. Baum

Date: July 7, 2003


William C. Fanslow III

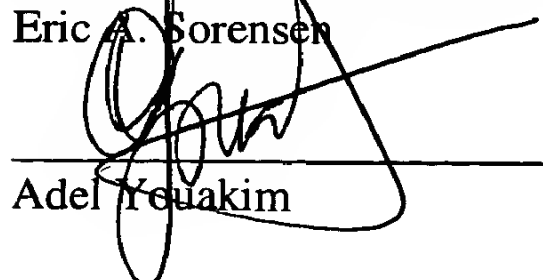
Date: June 23, 2003


Timothy E. Lofton

Date: 23 JUNE 2003


Eric A. Sorensen

Date: June 24, 2003


Adel Yeuakim

Date: June 24, 2003

H-B7C4

Book No.

rom Page No. 77

Ø DNA for H-B7C4 probes 11-1 and 13 (from K.B. library)
 sat in PEG for the 3 weeks I was on vacation.

Spun out

Washed

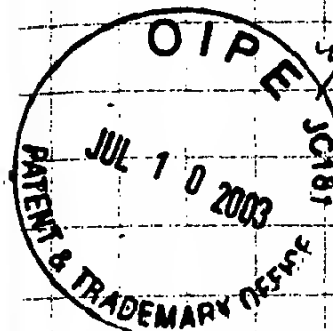
4x

70%

EtOH.

Sp. & vac'd

out heat.

Resuspended o/n in 60 µl H₂O.

Digest Ø DNAs w/ EcoRI (NEB rxn, buffer) and w/ NotI (NEB buffer, Bm)

1.) Ø DNA 11-1 w/ EcoRI

2.) " " w/ NotI

3.) Ø DNA 13 w/ EcoRI

4.) " " w/ NotI

4 µl Ø DNA

1.5 µl 10x buffer

.5 µl enzyme

9 µl H₂O

37°C 60-90'

11-1

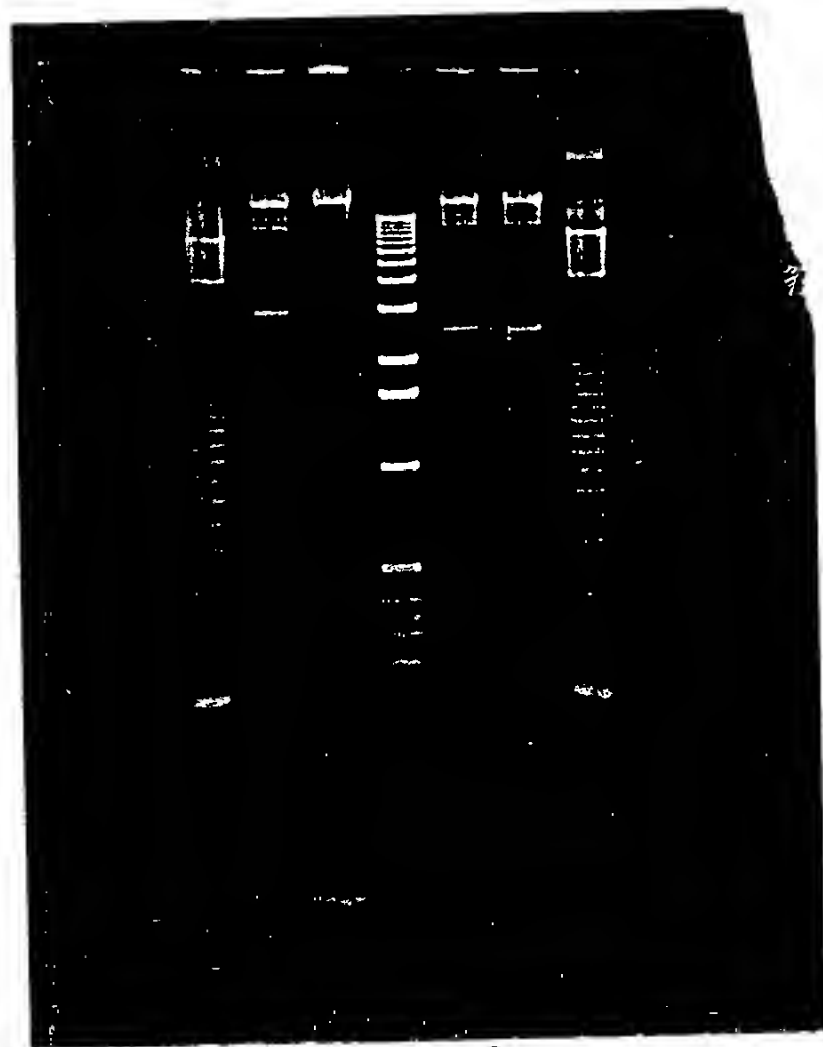
Ⓢ

95.5 µg/ml

13

Ⓢ

57.7 µg/ml



7055 p.80 LAB

RESULTS:

According to this gel, the clone #13 is way small compared to what I estimated by sequence & Pch. I guess I'll see what the DNA size like and I'm going to subclone the EcoRI fragment into pBS.

To Page No. 8

Witnessed & Understood by me,

Date

Invented by

Date

Recorded by



NspI
 AflIII
 BspLU11I
 MslI
 ATTGTGGAGCCACATGTCACAGCAGTATGGGGAAAGAATGTTTCATTAAAGTGTTTAATT
 181 -----+-----+-----+-----+-----+-----+-----+ 240

77,85 p. 8

TAACACCTCGGTGTACAGTGTCTGTCATACCCCTTTCTTACAAAGTAATTTACAAATTAA

← 34054

a I V E P H V T A V W G K N V S L K C L I -

33686 →

GAAGTAAATGAAACCATAACACAGATTTTCATGGGAGAAGATACATGGCAAAGTTCACAG
241 -----+-----+-----+-----+-----+-----+ 300
CTTCATTTACTTTGGTATTGTGTCTAAAGTACCCTCTTCTATGTACCGTTTTCAAGTGTC
a E V N E T I T Q I S W E K I H G K S S Q -

XcmI

AloI

EarI

ACTGTTGCAGTTCACCATCCCCAATATGGATTCTCTGTTCAAGGAGAATATCAGGGAAGA
301 -----+-----+-----+-----+-----+-----+ 360
TGACAACGTCAAGTGGTAGGGTTATACCTAAGAGACAAGTTCCTCTTATAGTCCCTTCT
← 33685

a T V A V H H P Q Y G F S V Q G E Y Q G R -

DraI

GTCTTGTTTAAAAATTACTCACTTAATGATGCAACAATTACTCTGCATAACATAGGATTC
361 -----+-----+-----+-----+-----+-----+ 420
CAGAACAAATTTTAAATGAGTGAATTACTACGTTGTTAATGAGACGTATTGTATCCTAAG
a V L F K N Y S L N D A T I T L H N I G F -

BmrI

TCTGATTCTGAAAATACATCTGCAAAGCTGTTACATTCCCGCTTGGAATGCCCAGTCC
421 -----+-----+-----+-----+-----+-----+ 480
AGACTAAGACCTTTTATGTAGACGTTTCGACAATGTAAGGGCGAACCTTTACGGGTCAGG
← 33687

a S D S G K Y I C K A V T F P L G N A Q S -

TCTACAACGTGAACTGTGTTAGTTGAACCCACTGTGAGCCTGATAAAAGGGCCAGATTCT
481 -----+-----+-----+-----+-----+-----+ 540
AGATGTTGACATTGACACAATCAACTTGGGTGACACTCGGACTATTTCCCGGTCTAAGA
a S T T V T V L V E P T V S L I K G P D S -

AlwNI

TTAATTGATGGAGGAAATGAAACAGTAGCAGCCATTTGCATCGCAGCCACTGGAAAACCC
541 -----+-----+-----+-----+-----+-----+ 600
AATTAACCTACCTCCTTTACTTTGTTCATCGTCGGTAAACGTAGCGTCGGTGACCTTTTGGG
a L I D G G N E T V A A I C I A A T G K P -

BmrI

32121 →

GTTGCACATATTGACTGGGAAGGTGATCTTGGTGAAATGGAATCCACTACAACCTCTTTT
601 -----+-----+-----+-----+-----+-----+ 660
CAACGTGTATAACTGACCCTTCCACTAGAACCCTTTACCTTAGGTGATGTTGAAGAAAA
← 33688

a V A H I D W E G D L G E M E S T T T S F -

[illegible]

BstYI

|

ACTACCACCCCTTCAGCCTACAATTCAGTGGCATCCCTCAACTGCTGACATCGAGGATCTA
1081 -----+-----+-----+-----+-----+-----+-----+ 1140
TGATGGTGGGAAGTCGGATGTAAAGTCACCGTAGGGAGTTGACGACTGTAGCTCCTAGAT
T T T L Q P T I Q W H P S T A D I E D L -
a

HincII

|

GCAACAGAACCTAAAAAATTGCCCTTCCCATTGTCAACTTTGGCAACAATTAAGGATGAC
1141 -----+-----+-----+-----+-----+-----+-----+ 1200
CGTTGTCTTGGATTTTTTAACGGGAAGGGTAACAGTTGAAACCGTTGTAAATTCCTACTG
A T E P K K L P F P L S T L A T I K D D -
a

ScaI

TaqII BanII TatI |
MunI BsrDI (Bgl2) Bsp1286I EarI | |
| | | | | |
ACAATTGCCACGATCATTGCTAGTGTAGTGGGTGGGGCTCTCTTCATAGTACTTGTAAGT
1201 -----+-----+-----+-----+-----+-----+-----+ 1260
TGTTAACGGTGCTAGTAACGATCACATCACCCACCCCGAGAGAAGTATCATGAACATTCA
TGTTAACGGTGC-TCTAGA ←32124
Start Transmembrane ^ <--34357
a T I A T I I A S V V G G A L F I V L V S -

Bsp24I

SspI SfcI | BbsI Bsp24I
| | | |
GTTTTGGCTGGAATATTCTGCTATAGGAGAAGACGGACGTTTCGTGGAGACTACTTTGCC
1261 -----+-----+-----+-----+-----+-----+-----+ 1320
CAAACCGACCTTATAAGACGATATCCTCTTCTGCCTGCAAAGCACCTCTGATGAAACGG
V L A G I F C Y R R R R T F R G D Y F A -
a

AAGAACTACATTCCACCATCAGATATGCAAAAAGAATCACAAATAGATGTTCTTCAACAA
1321 -----+-----+-----+-----+-----+-----+-----+ 1380
TTCTTGATGTAAGGTGGTAGTCTATACGTTTTTCTTAGTGTTTATCTACAAGAAGTTGTT
← 32125 ■
a K N Y I P P S D M Q K E S Q I D V L Q Q -

GATGAGCTTGATTCTTACCCAGACAGTGTAaaaaaaagaaaacaaaatccagtgaacaat
1381 -----+-----+-----+-----+-----+-----+-----+ 1440
CTACTCGAATAAGAATGGGTCTGTACATTTTTTCTTTTGTGTTTtaggtcacttgтта
D E L D S Y P D S V K K E N K N P V N N -
a

BsaAI EarI
SnaBI SapI
| |
CTAATACGTAAAGACTATTTAGAAGAGCCTGAAAAAACTCAGTGGAACAATGTAGAAAAT
1441 -----+-----+-----+-----+-----+-----+-----+ 1500
GATTATGCATTTCTGATAAATCTTCTCGGACTTTTTTGAGTCACCTTGTTACATCTTTTA
L I R K D Y L E E P E K T Q W N N V E N -
a

```

                                BglII
                                BstYI
                                |
CTCAATAGGTTTGAAAGACCAATGGATTATTATGAAGATCTAAAAATGGGAATGAAGTTT
1501 -----+-----+-----+-----+-----+-----+-----+ 1560
GAGTTATCCAACTTTCTGGTTACCTAATAATACTTCTAGATTTTACCCTTACTTCAA
a  L N R F E R P M D Y Y E D L K M G M K F -

                                MslI
                                NspI
                                |
                                AflIII
                                BspLU11I
                                |
                                MslI
                                |
                                DrdII
                                |
GTCAGTGATGAACATTATGATGAAAACGAAGATGACTTAGTTTCACATGTAGATGGTTCC
1561 -----+-----+-----+-----+-----+-----+-----+ 1620
CAGTCACTACTTGTAATACTACTTTTGCTTCTACTGAATCAAAGTGTACATCTACCAAGG
a  V S D E H Y D E N E D D L V S H V D G S -

                                BsrGI
                                TatI
                                |
                                (NotI)
                                |
GTAATTTCCAGGAGGGAGTGGTATGTTTAGCAACCACTGAATGTGACTTAACTATGTACA
1621 -----+-----+-----+-----+-----+-----+-----+ 1680
CATTAAAGGTCCTCCCTCACCATACAAATCGTTGGTGAATGACTTACACTGAATTGATACATGT
a  V I S R R E W Y V * <--34358 -CGCCGGCG <--36018

                                SpeI
                                BclI
                                |
                                SmlI
                                |
ATGTTTCATTCACACTAGTTGATCATTTCAGATTGTTTCATACTTTTCTTGAGGAAGAAT
1681 -----+-----+-----+-----+-----+-----+-----+ 1740
TACAAGTAAGTGTGATCAACTAGTAAAAGTCTAACAAGTATGAAAAAGAACTCCTTCTTA

HindIII Bce83I HindIII
| | |
AAGCTTTTTCAAGTTGATTTTCAAGCTTACTTTTTATATTCTAATCTGACAAATGAAAAT
1741 -----+-----+-----+-----+-----+-----+-----+ 1800
TTCGAAAAAGTTCAACTAAAAGTTCGAATGAAAAATATAAGATTAGACTGTTTACTTTTA

                                TatI
                                Bce83I
                                |
                                |
GTAAAATCTGAGTTCAGTGTATCTAAGCTGCTTTACAATTTTTTTTCAATGCTGTACTAC
1801 -----+-----+-----+-----+-----+-----+-----+ 1860
CATTTTAGACTCAAGTCACATAGATTTCGACGAAATGTTAAAAAAAGTTACGACATGATG

                                ApoI
                                DraI
                                |
                                ScaI
                                |
SmlI SwaI TatI
| | |
TGTCTCAAGATTTAAATTTTAATGCAGAGTACTTTATTGGTGTGAGGCACACAGGTAAGA
1861 -----+-----+-----+-----+-----+-----+-----+ 1920

```


ACAGAGTTCTAAATTTAAAATTACGTCTCATGAAATAACCACTCCGTGTGTCCATTCT

HincII | ApoI | DraI |

1921 AGAAATGTCAACATTAAATGTATGACTTACTTGGTACAAAAATTTTTTAAAAAGGGAACCT
-----+-----+-----+-----+-----+-----+ 1980
TCTTTACAGTTGTAATTTACATACTGAATGAACCATGTTTTTAAAAAATTTTTCCCTTGA

Bce83I | Tth111II | SmlI |

1981 ACCTTGACATTGTGTATTAAATGTTTACCTAAGACTATAATCTCAAGTATGATGTTTGTT
-----+-----+-----+-----+-----+-----+ 2040
TGGAAGTGTAAACACATAATTTACAAATGGATTCTGATATTAGAGTTCATACTACAAACAA

BtsI | HaeIV | Hin4I |

2041 ApoI |
TAACATATACCTCTCAAAATTTATCACCCTCAATGACACTGCATCAAAATTGACTATAA
-----+-----+-----+-----+-----+-----+ 2100
ATTGTATATGGAGAGTTTTTAAATAGTGGTGAAGTACTGTGACGTAGTTTTTAACTGATATT

SspI | SspI |

2101 AACTAATTCAAGAAATATTTATATATATTTTTTAATATACAAAAAATATTTAGCCTGATG
-----+-----+-----+-----+-----+-----+ 2160
TTGATTAAGTTCTTTATAAATATATATAAAAAATTATATGTTTTTTATAAATCGGACTAC

Tth111II |

2161 GAATGGCTTTTCTTTTCAAACATTATTTTCTAAGTTTCTATACAAATGAAATCTTTACCT
-----+-----+-----+-----+-----+-----+ 2220
CTTACCGAAAGGAAAAGTTTGTATAAAAGATTCAAAGATATGTTTACTTTAGAAATGGA

MslI | VspI | SfcI |

2221 CTGCATATTAATGAGCCTTGCCATAATTACTGTAGAGTGGCTTTTCAAAGATATTTTGTT
-----+-----+-----+-----+-----+-----+ 2280
GACGTATAATTACTCGGAACGGTATTAATGACATCTCACCGAAAAGTTTCTATAAAACAA

EarI | SapI |

2281 GCACTAAAACTGTGGTAGTAACTCAGTGAACATGATGTGTGGAAGAGCATAATTAGCTG
-----+-----+-----+-----+-----+-----+ 2340
CGTGATTTTGACACCATCATTTGAGTCACTTGTACTACACACCTTCTCGTATTAATCGAC

SspI | BspMI |

2341 GTCAATATTTTTGTCCAAAATACCTGCAAGAGTAATAAAATACATACCTTTCAAACATGA
-----+-----+-----+-----+-----+-----+ 2400
CAGTTATAAAAACAGGTTTTATGGACGTTCTCATTATTTTATGTATGGAAAGTTTGACT

```

Tth111II
|
TAATTATTAGTTTTTTTTTTCCTTCTGGAACATGGATTTTGGTACATTAGCAGTAGCCT
2401 -----+-----+-----+-----+-----+-----+ 2460
ATTAATAATCAAAAAAAAAAAGGAAAGACCTTGTAACCTAAAACCATGTAATCGTCATCGGA

TATTTTAATGCTTTATGTCCTAAACATACTAATAGAAATGAAAAGACGCAGAGAGAGCAT
2461 -----+-----+-----+-----+-----+-----+ 2520
ATAAAATTACGAAATACAGGATTTGTATGATTATCTTTACTTTTCTGCGTCTCTCTCGTA

SpeI
ScaI|
TatI || Eco57I SfcI ApoI
| || | |
TTCGGAATACTGAAGTACTAGTTTTAGAAATGAGACTTTCAGCCAACAATCTATAGAAAG
2521 -----+-----+-----+-----+-----+-----+ 2580
AAGCCTTATGACTTCATGATCAAAATCTTTACTCTGAAAGTCGGTTGTTAGATATCTTTC

BsrGI
TatI
|
AATTTTATGGACCATCTTGTTTTAGTTATTTAATGTTGATGTTGTTCAAATGGGTAAATG
2581 -----+-----+-----+-----+-----+-----+ 2640
TTAAAATACCTGGTAGAACAAAATCAATAAATTACAACTACAACAAGTTTACCCATTTAC

ApoI
|
TACAGAAAGAAAATTTTAGAGTAACTTGGAACCTTGGATATAACTAGAAAAAACTAGAT
2641 -----+-----+-----+-----+-----+-----+ 2700
ATGTCTTTCTTTTAAAATCTCATTGAACTTGAAACCTATATTGATCTTTTTTTGATCTA

BsmI
|
TATAGAATTAGTCGGTAACACTTGCTAATGGACATTGGCATTTCATCTCCTTTTTTCCTCCT
2701 -----+-----+-----+-----+-----+-----+ 2760
ATATCTTAATCAGCCATTGTGAACGATTACCTGTAACCGTAAGTAGAGGAAAAAGGAGGA

AAGTGATATGTATGTGTTTTAAGATTTCTGTTTTTACGATTAAAACTGGAAACATGAGGTT
2761 -----+-----+-----+-----+-----+-----+ 2820
TTCACATACATACACAAAATTCTAAAGACAAAATGCTAATTTTGACCTTTGTACTCCAA

TTTTGTTTTTGTTTTTTTTACATAATTACATATATTCCTTCTGAATCATTTATCTTTTGAG
2821 -----+-----+-----+-----+-----+-----+ 2880
AAAACAAAACAAAAAATGTATTAATGTATATAAGGAAGACTTAGTAAATAGAAAACCTC

Tth111II SfcI
| |
AAAGAAATGTTACCTAACTTCAAATGTGCTTTTTGTTTGTGAGGTAATTAAATTGCTTC
2881 -----+-----+-----+-----+-----+-----+ 2940
TTTCTTTACAATGGATTTGAAGTTTACACGAAAAACAACTCCATTAATTTAACGAAG

```

TACAGTGGAGGCTTACAAAATTATTGTGACAACTATTTTGAAGCTGAAAGGATAGTTTTT
 2941 -----+-----+-----+-----+-----+-----+ 3000
 ATGTCACCTCCGAATGTTTTAATAACACTGTTGATAAACTTCGACTTTCCTATCAAAAA
 CTATTGCTAAGTCATTTGAAAAAGTGACCATTTTGCCAGTGAAATGAAGTGGAAGTTAGT
 3001 -----+-----+-----+-----+-----+-----+ 3060
 GATAACGATTTCAGTAACTTTTTCACTGGTAAAACGGTCACTTTACTTCACCTTCAATCA
 AGGAGAATCATAAATTAAATATATTATTTTGTTAATAAAAAGGCAAAGTAGTAGGTACTT
 3061 -----+-----+-----+-----+-----+-----+ 3120
 TCCTCTTAGTATTTAATTTATATAATAAAACAATTATTTTCCGTTTCATCATCCATGAA

ApoI
 EcoRI
 BsiEI
 EaeI
 EagI
 GdiII
 NotI
 MspAII
 DraI
 SspI
 TTTAAACCCTCCCAACCAGCCCTTTCTCAATATTCATCAAATCTAAAACAGCGGCCGCGA
 3121 -----+-----+-----+-----+-----+-----+ 3180
 AAATTTGGGAGGGTTGGTCGGGAAAGAGTTATAAGTAGTTTAGATTTTGTGCGCCGGCGCT
 ATTCAGC
 3181 ----- 3187
 TAAGTCG

Enzymes that do cut:

AflIII	AloI	AlwNI	ApoI	BanI	BanII	BbsI	Bce83I
BclI	BglII	BmrI	BplI	BpmI	Bpu10I	BsaAI	BsaBI
BsaHI	BsaXI	BsbI	BseRI	BsiEI	BsmI	Bsp24I	Bsp1286I
BspGI	BspLU11I	BspMI	BsrDI	BsrGI	BstYI	BtsI	DraI
DrdI	DrdII	EaeI	EagI	EarI	Eco57I	EcoRI	GdiII
HaeI	HaeIV	Hin4I	HincII	HindIII	MmeI	MslI	MspAII
MunI	NotI	NspI	PstI	SapI	ScaI	SfcI	SmlI
SnaBI	SpeI	SspI	StyI	SwaI	TaqII	TatI	Tth111II
VspI	XcmI						

Enzymes that do not cut:

AarI	AatII	AccI	AceIII	AclI	AflIII	AhdI	ApaI
ApaLI	AscI	AvaI	AvrII	BaeI	BamHI	BbvCI	BcgI
BciVI	BglI	BmgI	Bpu1102I	BsaI	BsaWI	BseSI	BsgI
BsiHKAI	BsmBI	BspEI	BsrBI	BsrFI	BSSHII	BSSSI	BstAPI
BstDSI	BstEII	BstXI	BstZ17I	Bsu36I	ClaI	DraIII	EciI
Eco47III	EcoNI	EcoO109I	EcoRV	FseI	FspI	HaeII	HgiEII
HpaI	KpnI	MluI	MscI	NarI	NcoI	NdeI	NgoAIV
NheI	NruI	NsiI	NspV	PacI	Pfl1108I	PflMI	PinAI
PmeI	PmlI	PpiI	PshAI	Psp5II	PvuI	PvuII	RcaI
RleAI	RsrII	SacI	SacII	SalI	SanDI	SbfI	SexAI
SfiI	SgfI	SgrAI	SmaI	SphI	SrfI	Sse8647I	StuI
SunI	Tth111I	XbaI	XhoI	XmnI			